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<110> Takeda Chemicals Industries, Ltd.

<120> Novel Protein and its DNA

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35 40 45

Leu Gly Cys Ser Val Glu Ile Arg Lys Leu Trp Ser His Ile Arg Arg

50 55 60

Pro Trp Gly Ile Ala Val Gly Leu Leu Cys Gln Phe Gly Leu Met Pro

65 70 75 80

Phe Thr Ala Tyr Leu Leu Ala Ile Ser Phe Ser Leu Lys Pro Val Gln

85 90 95

Ala Ile Ala Val Leu Ile Met Gly Cys Cys Pro Gly Gly Thr Ile Ser

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Asn Ile Phe Thr Phe Trp Val Asp Gly Asp Met Asp Leu Ser Ile Ser

115 120 125

Met Thr Thr Cys Ser Thr Val Ala Ala Leu Gly Met Met Pro Leu Cys

130 135 140

Ile Tyr Leu Tyr Thr Trp Ser Trp Ser Leu Gln Gln Asn Leu Thr Ile

145 150 155 160

Pro Tyr Gln Asn Ile Gly Ile Thr Leu Val Cys Leu Thr Ile Pro Val

165 170 175

Ala Phe Gly Val Tyr Val Asn Tyr Arg Trp Pro Lys Gln Ser Lys Ile

180 185 190

Ile	Leu	Lys	Ile	Gly	Ala	Val	Val	Gly	Gly	Val	Leu	Leu	Leu	Val	Val
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275				280				285							
Phe	Pro	Leu	Ala	Tyr	Gly	Leu	Phe	Gln	Leu	Ile	Asp	Gly	Phe	Leu	Ile
290				295				300							
Val	Ala	Ala	Tyr	Gln	Thr	Tyr	Lys	Arg	Arg	Leu	Lys	Asn	Lys	His	Gly
305				310				315				320			
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325				330				335							
Ser	Ser	Arg	Glu	Thr	Asn	Ala	Phe	Leu	Glu	Val	Asn	Glu	Glu	Gly	Ala
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Ile	Thr	Pro	Gly	Pro	Pro	Gly	Pro	Met	Asp	Cys	His	Arg	Ala	Leu	Glu
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Val	Phe	Thr	Val	Val	Ser	Thr	Val	Met	Met	Gly	Leu	Leu	Met	Phe	Ser
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Leu	Gly	Cys	Ser	Val	Glu	Ile	Arg	Lys	Leu	Trp	Ser	His	Ile	Arg	Arg
				50					55					60	
Pro	Trp	Gly	Ile	Ala	Val	Gly	Leu	Leu	Cys	Gln	Phe	Gly	Leu	Met	Pro
				65					70					75	
Phe	Thr	Ala	Tyr	Leu	Leu	Ala	Ile	Ser	Phe	Ser	Leu	Lys	Pro	Val	Gln
				85					90					95	

Ala	Ile	Ala	Val	Leu	Ile	Met	Gly	Cys	Cys	Pro	Gly	Gly	Thr	Ile	Ser
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Asn	Val	Phe	Thr	Phe	Trp	Val	Asp	Gly	Asp	Met	Asp	Leu	Ser	Ile	Ser
				115				120					125		
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				130				135					140		
Ile	Tyr	Leu	Tyr	Thr	Trp	Ser	Trp	Ser	Leu	Gln	Gln	Asn	Leu	Thr	Ile
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Pro	Tyr	Gln	Asn	Ile	Gly	Ile	Thr	Leu	Val	Cys	Leu	Thr	Ile	Pro	Val
				165					170					175	
Ala	Phe	Gly	Val	Tyr	Val	Asn	Tyr	Arg	Trp	Pro	Lys	Gln	Ser	Lys	Ile
				180					185					190	
Ile	Leu	Lys	Ile	Gly	Ala	Val	Val	Gly	Gly	Val	Leu	Leu	Leu	Val	Val
				195					200					205	
Ala	Val	Ala	Gly	Val	Val	Leu	Ala	Lys	Gly	Ser	Trp	Asn	Ser	Asp	Ile
				210				215						220	
Thr	Leu	Leu	Thr	Ile	Ser	Phe	Ile	Phe	Pro	Leu	Ile	Gly	His	Val	Thr
				225				230				235			240
Gly	Phe	Leu	Leu	Ala	Leu	Phe	Thr	His	Gln	Ser	Trp	Gln	Arg	Cys	Arg
				245					250					255	
Thr	Ile	Ser	Leu	Glu	Thr	Gly	Ala	Gln	Asn	Ile	Gln	Met	Cys	Ile	Thr
				260					265					270	
Met	Leu	Gln	Leu	Ser	Phe	Thr	Ala	Glu	His	Leu	Val	Gln	Met	Leu	Ser
				275					280					285	
Phe	Pro	Leu	Ala	Tyr	Gly	Leu	Phe	Gln	Leu	Ile	Asp	Gly	Phe	Leu	Ile
				290				295						300	
Val	Ala	Ala	Tyr	Gln	Thr	Tyr	Lys	Arg	Arg	Leu	Lys	Asn	Lys	His	Gly

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 325 330 335
 Ser Ser Arg Glu Thr Asn Ala Phe Leu Glu Val Asn Glu Glu Gly Ala
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10

15

Leu Leu Val Ala Leu Glu Cys Ser Glu Ala Ser Ser Asp Leu Asn Glu

20

25

30

Ser Ala Asn Ser Thr Ala Gln Tyr Ala Ser Asn Ala Trp Phe Ala Ala

35

40

45

Ala Ser Ser Glu Pro Glu Glu Gly Ile Ser Val Phe Glu Leu Asp Tyr

50

55

60

Asp Tyr Val Gln Ile Pro Tyr Glu Val Thr Leu Trp Ile Leu Leu Ala

65

70

75

80

Ser Leu Ala Lys Ile Gly Phe His Leu Tyr His Arg Leu Pro Gly Leu

85

90

95

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Ile	Ile	Phe	Gly	Thr	Asp	His	Lys	Ser	Pro	Pro	Val	Met	Asp	Ser	Ser
115				120				125							
Ile	Tyr	Phe	Leu	Tyr	Leu	Leu	Pro	Pro	Ile	Val	Leu	Glu	Gly	Gly	Tyr
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Phe	Met	Pro	Thr	Arg	Pro	Phe	Phe	Glu	Asn	Ile	Gly	Ser	Ile	Leu	Trp
145				150				155				160			
Trp	Ala	Val	Leu	Gly	Ala	Leu	Ile	Asn	Ala	Leu	Gly	Ile	Gly	Leu	Ser
165				170				175							
Leu	Tyr	Leu	Ile	Cys	Gln	Val	Lys	Ala	Phe	Gly	Leu	Gly	Asp	Val	Asn
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195				200				205							
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210				215				220							
Tyr	Met	Met	Ile	Phe	Gly	Glu	Ala	Leu	Leu	Asn	Asp	Gly	Ile	Thr	Val
225				230				235				240			
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245				250				255							
Asp	Ile	Glu	Thr	Val	Asp	Ile	Leu	Ala	Gly	Cys	Ala	Arg	Phe	Ile	Val
260				265				270							
Val	Gly	Leu	Gly	Gly	Val	Leu	Phe	Gly	Ile	Val	Phe	Gly	Phe	Ile	Ser
275				280				285							
Ala	Phe	Ile	Thr	Arg	Phe	Thr	Gln	Asn	Ile	Ser	Ala	Ile	Glu	Pro	Leu
290				295				300							
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Tyr Phe Met Lys Met Leu Ser Ser Val Ser Glu Thr Leu Ile Phe Ile			
	355	360	365
Phe Met Gly Val Ser Thr Val Gly Lys Asn His Glu Trp Asn Trp Ala			
	370	375	380
Phe Ile Cys Phe Thr Leu Ala Phe Cys Gln Ile Trp Arg Ala Ile Ser			
385	390	395	400
Val Phe Ala Leu Phe Tyr Ile Ser Asn Gln Phe Arg Thr Phe Pro Phe			
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Ser Ile Lys Asp Gln Cys Ile Ile Phe Tyr Ser Gly Val Arg Gly Ala			
	420	425	430
Gly Ser Phe Ser Leu Ala Phe Leu Leu Pro Leu Ser Leu Phe Pro Arg			
	435	440	445
Lys Lys Met Phe Val Thr Ala Thr Leu Val Val Ile Tyr Phe Thr Val			
	450	455	460
Phe Ile Gln Gly Ile Thr Val Gly Pro Leu Val Arg Tyr Leu Asp Val			
465	470	475	480
Lys Lys Thr Asn Lys Lys Glu Ser Ile Asn Glu Glu Leu His Ile Arg			
	485	490	495
Leu Met Asp His Leu Lys Ala Gly Ile Glu Asp Val Cys Gly His Trp			
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Ser His Tyr Gln Val Arg Asp Lys Phe Lys Lys Phe Asp His Arg Tyr			
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 Ser Leu Tyr Lys Lys Leu Glu Met Lys Gln Ala Ile Glu Met Val Glu
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 580 585 590
 Arg Asp Ile Leu Thr Ser Asn Met Tyr Gln Val Arg Gln Arg Thr Leu
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 Ser Tyr Asn Lys Tyr Asn Leu Lys Pro Gln Thr Ser Glu Lys Gln Ala
 610 615 620
 Lys Glu Ile Leu Ile Arg Arg Gln Asn Thr Leu Arg Glu Ser Met Arg
 625 630 635 640
 Lys Gly His Ser Leu Pro Trp Gly Lys Pro Ala Gly Thr Lys Asn Ile
 645 650 655
 Arg Tyr Leu Ser Tyr Pro Tyr Gly Asn Pro Gln Ser Ala Gly Arg Asp
 660 665 670
 Thr Arg Ala Ala Gly Phe Ser Asp Asp Asp Ser Ser Asp Pro Gly Ser
 675 680 685
 Pro Ser Ile Thr Phe Ser Ala Cys Ser Arg Ile Gly Ser Leu Gln Lys
 690 695 700
 Gln Glu Ala Gln Glu Ile Ile Pro Met Lys Ser Leu His Arg Gly Arg
 705 710 715 720
 Lys Ala Phe Ser Phe Gly Tyr Gln Arg Asn Thr Ser Gln Glu Glu Tyr
 725 730 735
 Leu Gly Gly Val Arg Arg Val Ala Leu Arg Pro Lys Pro Leu Phe His

740	745	750
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755	760	765
Ser Leu Val Glu Val Arg Ser Arg Trp Thr Ala Asp His Gly His Ser		
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<213> Human

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Tyr	Glu	Gln	Ile	Arg	Arg	Ala	Ala	Asn	Ala	Phe	Phe	Leu	Phe	Ile	Ala			
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Leu	Val	Pro	Leu	Ile	Ile	Ile	Leu	Thr	Ile	Ala	Gly	Ile	Lys	Glu	Ile			
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Val	Glu	Asp	Phe	Lys	Arg	His	Lys	Ala	Asp	Asn	Ala	Val	Asn	Lys	Lys			
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 Lys Leu Ser Gly Thr Ile Glu Cys Glu Gly Pro Asn Arg His Leu Tyr
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<211> 791

<212> PRT

<213> Human

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15

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 Gly Phe Glu Pro Asn Pro Thr Val Ala Lys Thr Ser Pro Pro Val Phe
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 65 70 75 80
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 Arg Arg Lys Lys Arg Arg Leu Lys Lys Arg Ile Phe Ala Ala Val Ser
 115 120 125
 Glu Gly Cys Val Glu Glu Leu Val Glu Leu Leu Val Glu Leu Gln Glu
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 Leu Cys Arg Arg Arg His Asp Glu Asp Val Pro Asp Phe Leu Met His
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 Lys Leu Thr Ala Ser Asp Thr Gly Lys Thr Cys Leu Met Lys Ala Leu
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 Phe Ala Glu Glu Asn Asp Ile Leu Gly Arg Phe Ile Asn Ala Glu Tyr
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 Thr Glu Glu Ala Tyr Glu Gly Gln Thr Ala Leu Asn Ile Ala Ile Glu
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225	230	235	240
Val Asn Ala His	Ala Lys Gly Ala Phe Phe	Asn Pro Lys Tyr	Gln His
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Glu Gly Phe Tyr	Phe Gly Glu Thr Pro Leu Ala	Leu Ala Ala	Cys Thr
260	265	270	
Asn Gln Pro Glu	Ile Val Gln Leu Leu Met Glu	His Glu Gln	Thr Asp
275	280	285	
Ile Thr Ser Arg	Asp Ser Arg Gly Asn Asn	Ile Leu His	Ala Leu Val
290	295	300	
Thr Val Ala Glu	Asp Phe Lys Thr Gln Asn	Asp Phe Val	Lys Arg Met
305	310	315	320
Tyr Asp Met Ile	Leu Leu Arg Ser Gly Asn	Trp Glu Leu	Glu Thr Thr
325	330	335	
Arg Asn Asn Asp	Gly Leu Thr Pro Leu Gln	Leu Ala Ala	Lys Met Gly
340	345	350	
Lys Ala Glu Ile	Leu Lys Tyr Ile Leu Ser	Arg Glu Ile	Lys Glu Lys
355	360	365	
Arg Leu Arg Ser	Leu Ser Arg Lys Phe Thr	Asp Trp Ala	Tyr Gly Pro
370	375	380	
Val Ser Ser Ser	Leu Tyr Asp Leu Thr Asn	Val Asp Thr	Thr Thr Asp
385	390	395	400
Asn Ser Val Leu	Glu Ile Thr Val Tyr Asn	Thr Asn Ile	Asp Asn Arg
405	410	415	
His Glu Met Leu	Thr Leu Glu Pro Leu His	Thr Leu Leu	His Met Lys
420	425	430	
Trp Lys Lys Phe	Ala Lys His Met Phe Phe	Leu Ser Phe	Cys Phe Tyr
435	440	445	

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Glu	Glu	Glu	Ala	Ile	Pro	His	Pro	Leu	Ala	Leu	Thr	His	Lys	Met	Gly
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Trp	Leu	Gln	Leu	Leu	Gly	Arg	Met	Phe	Val	Leu	Ile	Trp	Ala	Met	Cys
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Ile	Ser	Val	Lys	Glu	Gly	Ile	Ala	Ile	Phe	Leu	Leu	Arg	Pro	Ser	Asp
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Val	Tyr	Ile	Val	Phe	Leu	Leu	Gly	Phe	Gly	Val	Ala	Leu	Ala	Ser	Leu
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Lys Met Leu Pro Glu Trp Leu Arg Ser Arg Phe Arg Met Gly Glu Leu		
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Cys Lys Val Ala Glu Asp Asp Phe Arg Leu Cys Leu Arg Ile Asn Glu		
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Val Lys Trp Thr Glu Trp Lys Thr His Val Ser Phe Leu Asn Glu Asp		
740	745	750
Pro Gly Pro Val Arg Arg Thr Ala Asp Phe Asn Lys Ile Gln Asp Ser		
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Ser Arg Asn Asn Ser Lys Thr Thr Leu Asn Ala Phe Glu Glu Val Glu		
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<400> 69

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<210> 94

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<210> 95

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19

<210> 96

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20

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<211> 156

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<213> Human

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<212> DNA

<213> Human

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<211> 373

<212> PRT

<213> Mouse

<400> 104

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225	230	235
Phe Leu Leu Ala Phe Leu Thr His Gln Ser Trp Gln Arg Cys Arg Thr		
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Ile Ser Ile Glu Thr Gly Ala Gln Asn Ile Gln Leu Cys Ile Ala Met		
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Leu Gln Leu Ser Phe Ser Ala Glu Tyr Leu Val Gln Leu Leu Asn Phe		
275	280	285
Ala Leu Ala Tyr Gly Leu Phe Gln Val Leu His Gly Leu Leu Ile Val		
290	295	300
Ala Ala Tyr Gln Ala Tyr Lys Arg Arg Gln Lys Ser Lys Cys Arg Arg		
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Gln His Pro Asp Cys Pro Asp Val Cys Tyr Glu Lys Gln Pro Arg Glu		
325	330	335
Thr Ser Ala Phe Leu Asp Lys Gly Asp Glu Ala Ala Val Thr Leu Gly		
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Pro Val Gln Pro Glu Gln His His Arg Ala Ala Glu Leu Thr Ser His		
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370

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<211> 1119

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<213> Mouse

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<400> 109

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<400> 111

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<211> 1237

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<213> Mouse

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<212> DNA

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<223> Primer

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<223> Probe

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<211> 1046

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<213> Rat

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<223> Primer

<400> 117

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23

<210> 118

<211> 24

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<223> Primer

<400> 118

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<223> Primer

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<211> 28

<212> DNA

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<220>

<223> Probe

<400> 121

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<210> 122

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 122

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<210> 123

<211> 38

<212> DNA

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<223> Primer

<400> 123

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<211> 18

<212> DNA

<213> Artificial Sequence

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<210> 125

<211> 317

<212> PRT

<213> Mouse

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<211> 363

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<213> Mouse

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<400> 144

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